



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------|------------------|
| 10/536,568 | 10/24/2005 | Christoph Brabec | 21928-018US1 | 2161 |
| 26161 7590 12/24/2008 FISH & RICHARDSON PC P.O. BOX 1022 MINNEAPOLIS, MN 55440-1022 | | | | |
| EXAMINER | | | | |
| INGHAM, JOHN C | | | | |
| ART UNIT | | PAPER NUMBER | | |
| 2814 | | | | |
| NOTIFICATION DATE | | DELIVERY MODE | | |
| 12/24/2008 | | ELECTRONIC | | |

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

PATDOCTC@fr.com

Office Action Summary

Application No.

10/536,568

Applicant(s)

BRABEC ET AL.

Examiner

JOHN C. INGHAM

Art Unit

2814

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 September 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3,5-9,14-31,33,34,38-40,43 and 47-53 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1,3,5-8,15-24,30,33,34,38-40,47 and 49 is/are allowed.
- 6) ☒ Claim(s) 9,14,25-29,31,43,48 and 51-53 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 May 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-946)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 16 September 2008 has been entered.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Art Unit: 2814

4. Claims **9, 43 and 51-53** are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamagishi (EP 1 096 577) and Saito ('Deposition of organic electrodes...').
5. Regarding claims **9 and 43**, Yamagishi discloses in Fig 1 a component comprising: a substrate (11); a first semitransparent electrode (12, ¶19); a second electrode (14), a photovoltaically active layer (13) between the first and second electrodes wherein: the first electrode is between the substrate and the photovoltaically active layer; the second electrode is opaque (¶ 31) and the article is a photovoltaic cell.
6. Yamagishi does not specify wherein the photovoltaically active layer comprises an organic material, and the second electrode is of a predominantly organic material.
7. Saito teaches that organic materials are used as active layers (col 4 ln 4-6) and as electrode material (col 3 ln 6-7) in order to provide a low cost alternative to conventional inorganic devices (col 1 ln 1-4). It would have been obvious to one of ordinary skill in the art at the time of the invention to use the teachings of Saito in order to provide a low cost alternative to conventional inorganic devices.
8. In reference to the claim language referring to the first electrode being a negative electrode and the second electrode being a positive electrode, intended use and other types of functional language must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In a claim drawn to a process of making, the intended use must result

in a manipulative difference as compared to the prior art. In re Casey, 152 USPQ 235 (CCPA 1967); In re Otto, 136 USPQ 458, 459 (CCPA 1963).

9. Regarding claims **51 and 53**, Yamagishi discloses in Fig 1 an article comprising: a substrate (11); a first semitransparent electrode (12, ¶19); a photovoltaically active layer (13), and a second electrode (14), wherein: the first electrode is between the substrate and the photovoltaically active layer; the photovoltaically active layer is between the first and second electrodes; the second electrode is opaque (¶31) and covers the entire area of the photovoltaically active layer, and the article is a photovoltaic cell.

10. Yamagishi does not specify wherein the photovoltaically active layer comprises an organic material, and the second electrode is of a predominantly organic material.

11. Saito teaches that organic materials are used as active layers (col 4 ln 4-6) and as electrode material (col 3 ln 6-7) in order to provide a low cost alternative to conventional inorganic devices (col 1 ln 1-4). It would have been obvious to one of ordinary skill in the art at the time of the invention to use the teachings of Saito in order to provide a low cost alternative to conventional inorganic devices.

12. In reference to the claim **52** language referring to the second electrode being a positive electrode, intended use and other types of functional language must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In a claim drawn to a process of making, the intended use must result in a manipulative difference as

Art Unit: 2814

compared to the prior art. In re Casey, 152 USPQ 235 (CCPA 1967); In re Otto, 136 USPQ 458, 459 (CCPA 1963).

13. Claim **31** is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamagishi and Saito, and further in view of Lamotte (US 6,746,751). Yamagishi and Saito do not specify wherein the second electrode comprises PEDOT.

14. Lamotte teaches that PEDOT is a suitable conductive polymer and used as an electrode for a photovoltaic cell electrode (col 15 In 33 and In 54). Since the conductive polymers can be applied by printing (col 1 In 30), they enable fabrications with higher flexibility (col 1 In 33). It would have been obvious to one of ordinary skill in the art at the time of the invention to use the teachings of Lamotte in order to produce a device with higher flexibility.

15. Claims **48, 14, 25 and 26** are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamagishi and Saito, and further in view of Kataoka. Yamagishi and Saito do not specify leakage connectors configured to reduce ohmic losses during use of the cell.

16. Kataoka teaches that a grid of current-collecting electrodes (silver paste) are provided on a photovoltaic electrode for efficient current collection (col 7 In 61-64). It would have been obvious to one of ordinary skill in the art at the time of the invention to use the teachings of Kataoka for efficient current collection. This structure meets the limitations of leakage connectors as claimed. The claim language "to reduce ohmic losses during use of the cell" describes an intended use of the leakage connectors. A

recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim.

17. Regarding claims **26 and 29**, Kataoka teaches wherein the leakage connectors are printed on the second electrode (col 8 ln 5).

18. Regarding claim **27**, Kataoka teaches wherein the leakage connectors are devoid of adhesive (conductive paste of silver, sputtered, col 7 ln 65).

Allowable Subject Matter

19. Claims 1, 3, 5-8, 15-24, 30, 33, 34, 38-40, 47, 49 and 50 are allowed.

20. The following is a statement of reasons for the indication of allowable subject matter: the prior art does not disclose or make obvious the cell of claim 1, or method of claim 6, wherein the first electrode has a first work function, the second electrode is an organic material that is opaque and has a second work function higher than the first work function.

Response to Arguments

21. Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JOHN C. INGHAM whose telephone number is (571)272-8793. The examiner can normally be reached on M-F, 8am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wael Fahmy can be reached on (571) 272-1705. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Howard Weiss/
Primary Examiner
Art Unit 2814

John C Ingham
Examiner
Art Unit 2814

/J. C. I./
Examiner, Art Unit 2814